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**Soviet Capabilities and Intentions with
Respect to Biological Warfare**

Submitted by the
DIRECTOR OF CENTRAL INTELLIGENCE

Concurred in by the
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The Central Intelligence Agency and the intelligence organizations of the Departments of State, Defense, and NSA.

Concurring:

Director of Intelligence and Research, Department of State

Director, Defense Intelligence Agency

Director of the National Security Agency

Abstaining:

The Atomic Energy Commission Representative to the USIB and the Assistant Director, Federal Bureau of Investigation, the subject being outside of their jurisdiction.

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**Soviet Capabilities and Intentions with
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SOVIET CAPABILITIES AND INTENTIONS WITH RESPECT TO BIOLOGICAL WARFARE

THE PROBLEM

To assess the capabilities and intentions of the USSR to employ biological warfare agents over about the next five years.

CONCLUSIONS

A. We have no doubt that the USSR has seriously considered the potential of BW as a supplement to its other military capabilities. We believe that a BW research program exists in the USSR, but we know of no facility devoted exclusively to offensive BW research and we have no evidence of field testing. Soviet military training in BW concerns itself exclusively with defense, as do the discussions of BW in those Soviet military writings to which we have access.

B. We believe that the Soviets have no present intention to employ BW in military operations. They probably consider BW to be less efficient than other available weapons and uncertain in its effects. The USSR, however, will continue to develop defensive means consistent with its estimate of the Western BW threat, and to consider the offensive potential of BW.

C. While we have no positive indications of any Soviet effort to produce and stockpile BW weapons, BW research alone would provide the USSR with the capability for clandestine employment of BW. Further, we believe that if they decide to do so, the Soviets could produce large quantities of a number of BW agents for military operations within a few months after such a decision. Delivery could be accomplished by a variety of existing means.

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DISCUSSION

Soviet BW Research and Development

1. The USSR's interest in the possible military applications of biological agents has been evident in Soviet technical and military literature since the early 1920's, and research applicable to BW has been underway for two or three decades. Virtually all available evidence could be related to Soviet work in epidemiology, public health, and sanitation, but we believe that a BW research program exists in the USSR. We know of no facility in the USSR devoted exclusively to offensive BW research and we have no evidence of field testing. However, over the years we have accumulated indications of possible BW activity at a few locations. The most suspect of these locations is Vozhrozdeniya Island in the Aral Sea, where there has been activity which could be related to military needs. There is no strong evidence, however, that this activity is connected with BW research.

Availability of BW Agents in the USSR

2. There are no positive indications that the USSR now possesses BW agents for offensive use. Soviet scientists are studying actively the usual variety of communicable diseases of humans and animals as part of their research activities in public health and veterinary medicine. The long history of serious infectious diseases in the USSR has forced attention to epidemiological problems, and Soviet scientists have accumulated much experience in this field. This study and experience could be put to use in the development and production of offensive BW agents if the Soviets so choose, but there is no firm indication that this has been done.

3. The Soviets have been experimenting with an aerogenic immunization technique which involves dissemination of immunizing agents (antigens) by aerosols within a closed area. Further development of this process could provide an economical, practical method of immunizing large groups of people and animals. These experiments also provide the Soviets with valuable data applicable to the dissemination of BW agents. The combination of antigens given the test subjects suggest that these experiments go beyond a purely public health function.

4. We believe that, through their own research and open US literature, the Soviets are well aware of the properties of a variety of BW agents, and they have the technical capability to develop, produce, and stockpile them in militarily significant quantities. We have, however, insufficient evidence on which to base an estimate of the types and quantities of BW agents which might be available to the Soviets for offensive use.

5. While we cannot confirm that any BW agents have been standardized in the Soviet Union, there are certain biological warfare-related activities that are suspect. Soviet studies on botulinum toxin strongly suggest BW interest.

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For example, there have been extensive Soviet studies on the dissemination of this toxin by the aerosol route, although this is not a natural means of transmitting the toxin. Soviet work on plague and anthrax may have BW application, and there have been past Soviet expressions of interest in these diseases as agents. Soviet investigations on tick-borne encephalitis have been conducted widely in connection with public health. This disease is not endemic to the US, and therefore would offer some advantages to the Soviets for use against US personnel, who have little or no natural immunity. Tularemia, brucellosis, and Q-fever are endemic in the USSR, and the Soviets have conducted considerable research on these diseases as public health problems. This research could also support the development of these organisms as BW agents.

6. The table (on page 4) describes certain possible Soviet anti-personnel BW agents and their properties. This list of possible BW agents is based on diseases on which there has been extensive Soviet research—all are diseases endemic to the USSR or known to be subjects of US BW research. Other diseases of humans and/or animals which may have future importance as BW agents include foot and mouth disease, psittacosis, rabies, rinderpest, smallpox, staphylococcus enterotoxin, and glanders. Soviet technical literature reveals no interest in anti-crop BW agents.

Soviet BW Munitions and Delivery Systems

7. We have no evidence of any munitions and delivery systems developed specifically for BW by the USSR. Some uses of biological warfare agents, in particular clandestine dissemination, are technically so simple that evidence on their existence cannot be expected. Delivery systems for agents which can be disseminated by dry or wet aerosols (botulinum toxin, anthrax, tularemia, brucellosis, encephalitis, yellow fever) present no special technical problems which might provide positive evidence of BW weapon system development. Spray systems for ground vehicles, aircraft, cruise missiles, surface ships, and submarines could also be developed without our knowledge. Developmental work on technically more complex systems, such as BW warheads for strategic missiles, would be more difficult to conceal.

Soviet Military and Civilian Defense Against BW

8. The Soviet military establishment includes organizations charged with defense of troops against BW. The Chief Military Medical Directorate of the Ministry of Defense has the prime responsibility for defense of personnel and for numerous military and non-military medical research centers which work on BW defense matters. In addition to medical service troops for BW defense, epidemiological services exist at all military levels to provide sanitation and disinfection facilities. Soviet military forces are known to undergo training in BW defensive measures. Defense against BW has been included since 1956 in Soviet civil defense efforts which are now under the control of the Ministry of Defense. Poor instruction and lack of equipment have limited the effectiveness of this BW defense training. There is no indication that the Soviets have thus far developed an automatic BW alarm system.

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TABLE

Possible Soviet BW Agents

AGENT	TYPE	ROUTE OF INFECTION ^b	EFFECT	PREVENTION	TREATMENT
Botulinus	anti-personnel	ingestion, inhalation	lethal	toxoid immunization	ineffective
Anthrax ^a	anti-personnel, livestock	ingestion, inhalation	lethal	partial immunization available	partially effective
Tularemia ^a	anti-personnel	Animal contact, inhalation	incapacitating, sometimes lethal	immunization available	effective
Brucella ^a	anti-personnel, livestock	contact, inhalation	incapacitating	immunization available	effective
Plague ^a	anti-personnel	insect-borne, inhalation (pneumonic plague)	generally lethal	immunization available	partially effective
Q-fever ^a	anti-personnel, livestock	inhalation, contact with infected animals	incapacitating	partially developed vaccine	effective
Encephalitis ^a	anti-personnel	tick-borne	incapacitating, sometimes lethal	immunization available	effective
Yellow Fever	anti-personnel	insect-borne or aerosol	Variable lethality depending on state of immunity	immunization available	partially effective

^a Endemic in the USSR.^b Includes artificial means of dissemination.~~SECRET~~~~SECRET~~

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Soviet Military Doctrine with Respect to BW

9. The discussion of BW in those Soviet classified and unclassified military writings to which we have access concerns itself exclusively with defense. BW is treated under the general heading of "weapons of mass destruction" along with nuclear and chemical weapons. While Soviet military writings and military exercises often include consideration of use by both sides of nuclear and chemical weapons, consideration of BW is rare. In those cases where it is considered, available documents indicate that the "enemy," not the Soviets, used BW offensively.

Soviet Intentions and Prospects

10. We believe that Soviet intelligence has a good assessment of Western, including US, capabilities and activities in the BW field. We believe that the Soviets will continue to monitor Western BW efforts to the extent possible, and to develop defensive means consistent with their estimate of the Western threat.

11. While political considerations may impose some restraints against use of BW in Soviet doctrine, the Soviet assessment of relative military advantages and disadvantages of the use of BW weapons would probably impose stronger restraints. Despite protective equipment (such as gas masks developed for anti-CW use) and immunization programs, the USSR remains vulnerable to BW attack. Civil defense efforts have included indoctrination in BW counter-measures, but there is an apparent lack of interest and a paucity of equipment. In view of the delayed effects of BW weapons and the greater predictability and destructiveness of nuclear weapons, we believe it highly unlikely that the Soviets would consider BW as a useful means of strategic attack in the event of general war. Further, the Soviets probably believe that BW weapons are of doubtful effectiveness in tactical situations because of delayed and unpredictable effects. These factors would also weigh heavily against Soviet employment of BW in limited wars.

12. Despite the foregoing, if the offensive use of BW in military operations were to appear advantageous to Soviet planners, we believe that the USSR could produce significant quantities of a number of pathogenic organisms in a few months using present facilities. Some CW munitions might be modified for immediate BW use. Several years would be required to develop a line of effective BW weapons systems for use on a large scale. In any case, we believe the Soviets now have a capability for clandestine use of BW.

BW Programs in the East European Countries

13. There are no known offensive BW programs within the East European countries. Although there is no indication of Soviet direction or supervision, medical research in Czechoslovakia and East Germany almost certainly contributes to Soviet research programs applicable to BW. All East European countries have the capability to produce BW agents for clandestine operations, but it is highly unlikely that any member of the Warsaw Pact would develop or employ BW in military operations without the concurrence and assistance of the Soviet Union.

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